N° 13,798 A.D. 1896

Date of Application, 23rd June, 1896

Complete Specification Left, 19th Mar., 1897—Accepted, 5th June, 1897

PROVISIONAL SPECIFICATION.

Improvements in Pads for Crutches, Sticks, and Wooden Legs.

I WILLIAM HAROLD GLOVER of 24 Brundrett's Road, Chorlton-cum-Hardy, Manchester, in the County of Lancaster, Wood Engraver, do hereby declare the nature of this invention to be as follows :—

My said invention relates to improvements in pads for crutches, sticks and wooden legs and relates more particularly to pads intended to be anti-slipping.

At present the most generally used crutch pad consists simply of a rubber sock forced upon the end of the crutch and having a sufficiently thick sole to produce the required softness and resiliency. This however, is in other respects most defective, inasmuch as it slips on wet or greasy surfaces and is either very quickly pierced at the base by the end of the crutch, or burst at the sides, such bursting being caused by the stretching of the pad in a sidelong direction when the user is traversing uneven ground.

This necessitates a frequent renewal of the pads which is a considerable source of expense.

My invention is intended to obviate these defects.

For instance to prevent pads of this description from slipping I combine with the rubber metal or other suitable substance harder than the rubber. A convenient way of doing this is to thrust or introduce steel or other metallic pins into the sole or foot of the rubber pad the heads of the pins lying about flush with the rubber.

These metallic pins are embedded in the solid pad about two thirds of its length, the unpenetrated portion affording a soft and resilient cushion. The pins might be headed or staple shaped. The exposed ends of the pins acting in conjunction with the rubber foot grip the surface even when wet or greasy, and so prevent accidents. When traversing dry, smooth, or hard-frozen surfaces the rubber becomes the non-slipping agent so that between the two, all slipping of the pad is prevented. The pins inserted as above confer a certain amount of rigidity on the pad and prevent sidelong movement. I do not however confine myself to the use of steel pins or the like for the purposes of my invention as any other suitable arrangement and any other material harder than rubber might be used. My invention also refers to an improved mode of securing such rubber pads whether anti-slipping or not to the crutch, sick or wooden leg. I furnish the foot of the crutch or stick with a ferrule of steel or other suitable metal and prolonged past the wood so as to present a hollow socket. I make a pad of solid rubber and fix the upper end into this socket the socket therefore surrounding and supporting the pad so that all sidelong motion is prevented. There is little or no strain on the pad and it is not subject to be cut, burst or injured as under the ordinary circumstances.

The pad fitted in this improved manner may be of my improved construction *viz.* with metal pins or other hard material combined with the rubber, or it might be of rubber alone. When the pad enclosed in the socket is furnished with anti-slipping pins as described, the pins in conjunction with the socket confer such rigidity on the pad that all sidelong movement is prevented. Pads constructed and fitted in

[*Price* 8*d*]

my improved manner, wear so much longer, that in addition to the comfort and safety obtained from their use, a very considerable economy is effected.

Dated this 22nd day of June 1896.

For the Applicant,
E. K. DUTTON & Co.,
5 John Dalton Street, Manchester, Chartered Patent Agents.

COMPLETE SPECIFICATION.

Improvements in Pads for Crutches, Sticks, and Wooden Legs.

I WILLIAM HAROLD GLOVER of 24 Brundrett's Road, Chorlton-cum-Hardy, Manchester, in the County of Lancaster, Wood Engraver, do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement and accompanying drawings:—

My said invention relates to improvements in pads for crutches, sticks and wooden legs and relates more particularly to pads intended to be anti-slipping.

At present the most generally used crutch pad consists simply of a rubber sock forced upon the end of the crutch and having a sufficiently thick sole to produce the required softness and resiliency. This however, is in other respects most defective, inasmuch as it slips on wet or greasy surfaces and is either very quickly pierced at the base by the end of the crutch, or burst at the sides, such bursting being caused by the stretching of the pad in a sidelong direction when the user is traversing uneven ground.

This necessitates a frequent renewal of the pads which is a considerable source of expense.

My invention is intended to obviate these defects.

For instance to prevent pads of this description from slipping I combine with the rubber, metal, or other suitable substance harder than the rubber. A convenient way of doing this is to thrust or introduce steel or other metallic pins into the sole or foot of the rubber pad the heads of the pins lying about flush with the rubber.

These metallic pins are embedded in the solid pad about two thirds of its length, the unpenetrated portion affording a soft and resilient cushion. The pins might be headed or staple shaped. The exposed ends of the pins acting in conjunction with the rubber foot grip the surface even when wet or greasy, and so prevent accidents. When traversing dry, smooth, or hard-frozen surfaces the rubber becomes the non-slipping agent so that between the two, all slipping of the pad is prevented. The pins inserted as above confer a certain amount of rigidity on the pad and prevent sidelong movement. In securing the rubber pad to the crutch, stick or wooden leg I furnish the foot of the crutch or stick with a ferrule of steel or other suitable metal and prolonged past the wood so as to present a hollow socket.

The improved non-slipping pad is fixed into this socket, the socket therefore surrounding and supporting the pad so that all sidelong motion is prevented. There is little or no strain on the pad and it is not subject to be cut, burst or injured as under the ordinary circumstances.

The accompanying sheet of drawings illustrates more fully my improved crutch pad and also a ready and convenient method of securing the steel ferrule to the crutch or stick.

In the said drawings

Fig. 1 represents an outside view of my improved crutch pad fitted to the end of a crutch or the like.

Fig. 2 is a plan of the underside of Fig. 1.

Fig. 3 is a sectional view of the pad shewing the metal or other non-slipping pin in position.

Fig. 4 shows the method of fixing the steel ferrule exactly in position upon the crutch.

Fig. 5 shows a modified form of the improved crutch pad.

The rubber pad *a* is provided with a pin *b* of steel or other metal or material harder than rubber the head of which lies about flush with or extends slightly beyond the surface of the rubber pad. It will of course be understood that the shape of the head of the pin might vary. It might for instance be of conical form instead of flat. The pin *b* might be made of any metal or material harder than rubber such as wrought iron, brass, vulcanite, leather, pegamoid or the like.

It will be noted that the pin *b* does not extend throughout the length of the rubber pad *a* the unpenetrated portion of the rubber serving as an elastic cushion or buffer. The pad *a* is secured to the foot of the crutch, stick or wooden leg *c*, by means of a ferrule *d* of steel or other suitable metal, which fits upon the foot of the stick *c* and is prolonged to form a hollow socket.

The pad *a* is forced into the socket, the socket embracing the pad so as to prevent to a great extent sidelong movement. The ferrule *d* is flared out at its lower end by which means any cutting of the rubber pad by vertical or sidelong movement is obviated.

The flared portion of the ferrule, overhanging as it does the rubber pad *a*, also enables the foot of the stick or crutch to be pulled out of soft or sticky ground without throwing any strain upon the pad, thus preventing it from being forcibly withdrawn from the ferrule.

A convenient and ready method of securing the ferrule *d* to the crutch or stick *c* is indicated in Fig. 4.

The ferrule *d* is of slightly less diameter than the stick *c* to which it is to be affixed. The ferrule is shrunk upon the end of the stick by being first heated to a moderate temperature and then hammered upon the stick *c* by the aid of a plug *e* inserted into the lower flared end of the ferrule. As it cools down the ferrule *d* shrinks and is thus securely attached to the end of the stick or crutch. If desired the diameter of the upper part of the ferrule *d* may be slightly increased to facilitate the driving into position of the ferrule upon the end of the crutch. The neck e^1 of the plug *e* corresponds in length to the neck of the rubber pad *a* and thus provides for the exact adjustment of the ferrule upon the crutch *c*. When it is desired to detach the ferrule from the crutch, it is again heated and a plug provided with a neck of greater length than the length of the ferrule is inserted into the socket when the crutch may be driven out of the ferrule.

By this method of securing the ferrule, the crutch is not weakened by the insertion of screws or rivets.

Although I have described and illustrated my improved crutch pad as furnished with one anti-slipping pin only I might nevertheless apply several such pins distributed over the area of the rubber pad. These pins especially when made of wire might be formed with heads or of a staple shape to prevent them from being thrust further into the rubber by pressure during use.

As the gist of my invention consists in combining with rubber, metal or other substance harder than rubber it must be understood I do not confine myself to the use of the hereinbefore described pins alone.

For instance I might surround the portion of the rubber pad *a* protruding below the ferrule *d* with a conical ring *f* of steel or other material harder than rubber as indicated in Fig. 5. The ring *f* might be secured to the rubber pad *a* with pins, rivets, or any other suitable means.

I may also use the pin *a* in conjunction with the ring *f*.

When the pad enclosed in the socket is furnished with the hereinbefore described anti-slipping pin or pins, or conical ring as set forth, the pin or pins or the like in conjunction with the socket confer such rigidity on the pad that all sidelong movement is prevented.

Pads constructed and fitted in my improved manner, wear so much longer, that in addition to the comfort and safety obtained from their use, a very considerable economy is effected.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed I declare that what I claim is.

1.) The improved pads for crutches, walking sticks and wooden legs constructed and arranged substantially as described and illustrated.

2.) In pads for the indicated purposes combining with rubber, a pin or pins of steel or other suitable metal or substance harder than rubber so as to render the rubber pad non-slipping substantially as described and shown.

3.) The modified construction of pad for crutches, walking sticks and wooden legs substantially as described and illustrated in Fig. 5 of the drawings.

4.) The rubber pad *a* furnished with a pin or pins, or a conical ring, of steel or other substance harder than rubber, in combination with the metallic ferrule *d* for the purposes and substantially as described and shown.

Dated this 17th day of March 1897.

For the Applicant,
E. K. DUTTON & Co.,
5 John Dalton Street, Manchester, Chartered Patent Agents.

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A.D. 1896. JUNE 23. N° 13,798.
GLOVER'S COMPLETE SPECIFICATION.

(1 SHEET)

[This Drawing is a reproduction of the Original on a reduced scale.]

FIG. 1.

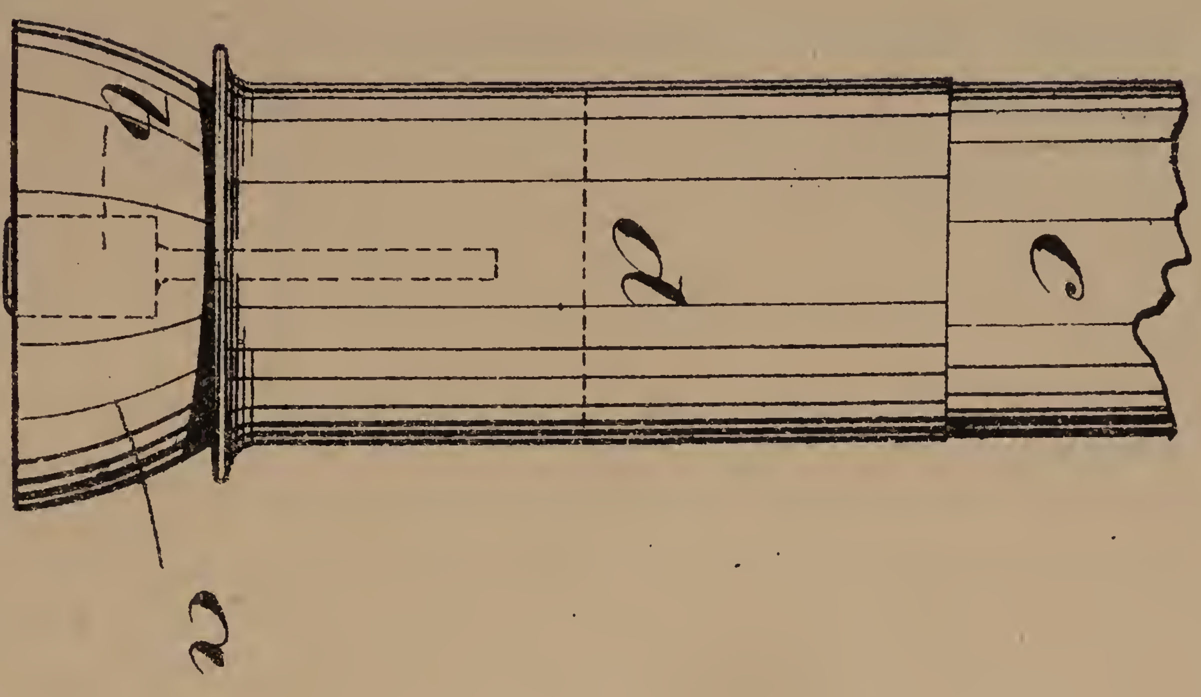


FIG. 2.

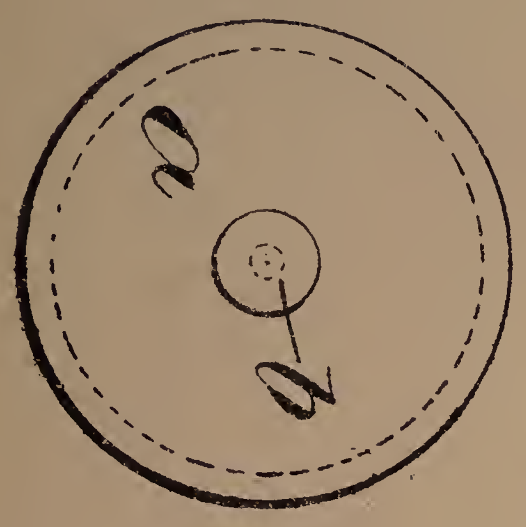


FIG. 3.

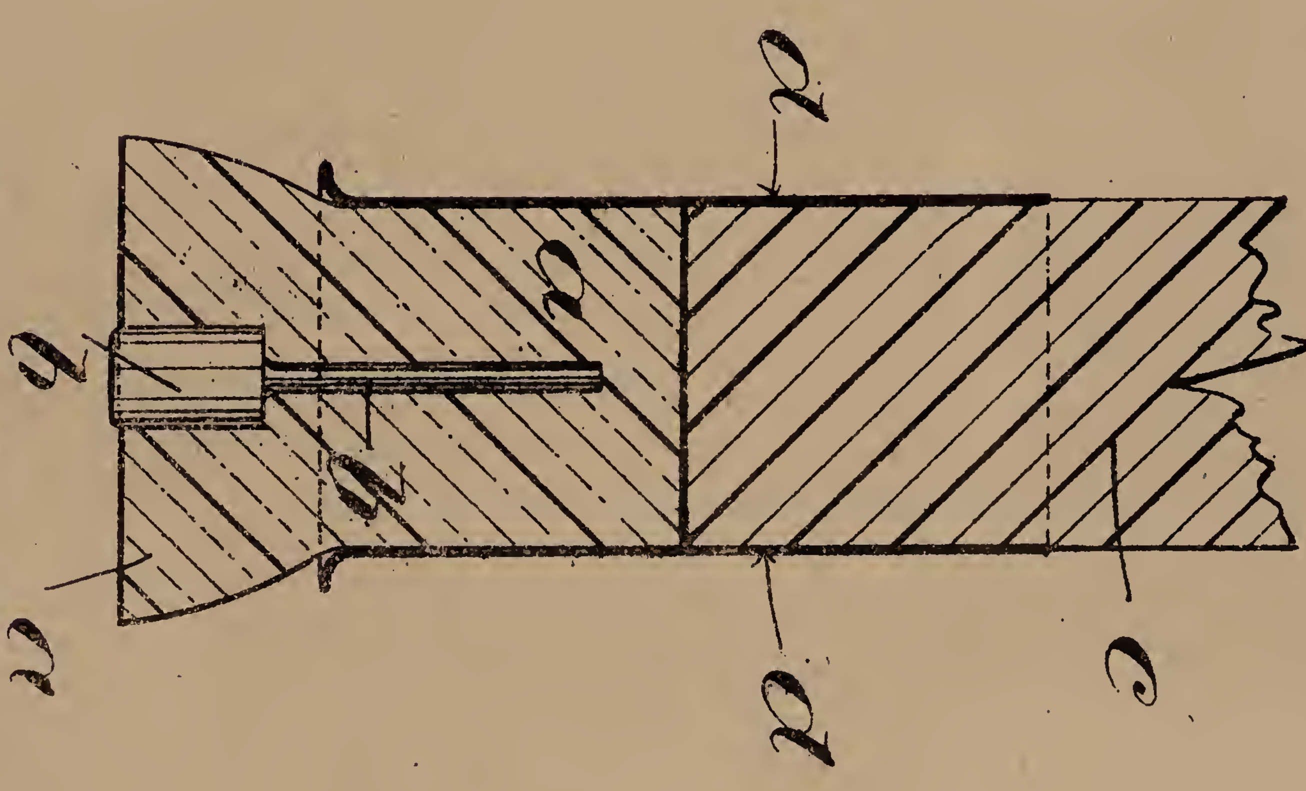


FIG. 4.

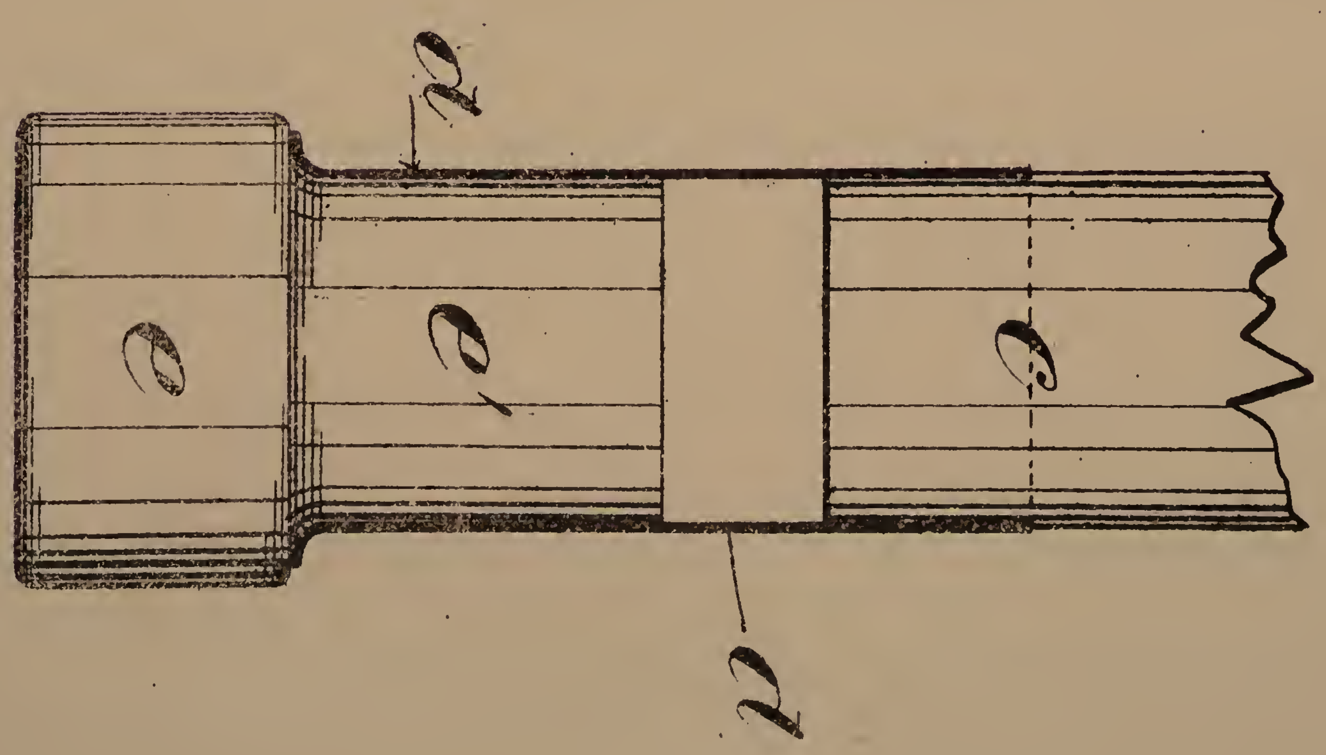
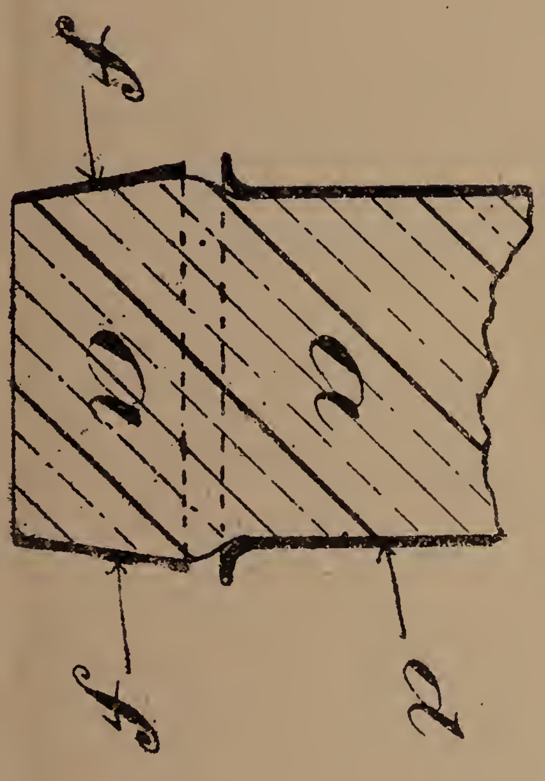


FIG. 5.



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